

WA 2314
No Date
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Remedial Ground Water Program
Hooker Chemicals & Plastics Corp.
Tacoma, Washington Plant

FILE COPY

SCOPE OF WORK

The following scope is for the excavation and disposal of certain soils, and the backfill and covering of the resultant cavities in the earth. It is based on the State of Washington Department of Ecology Order, Docket No. DE (81-153), to Hooker Chemicals & Plastics Corp., P.O. Box 2157, Tacoma, Washington.

The work described in this scope will be performed by qualified contractors. The contractor for soil removal, transportation, disposal, and backfill will be Chem-Security Systems, Inc., or possibly another equally qualified contractor.

To ensure compliance with the D.O.E. order, a qualified engineering firm will also be hired to provide field surveillance for handling field engineering questions with respect to excavations, foundations for tankage, structures, or equipment adjacent to or inside the excavation areas, and for providing daily field reports. The engineering firm will be Hart-Crowser & Associates, Inc. or another qualified consultant.

We expect that the excavation, disposal, and backfilling will take place during the months of April and May 1981, or as soon as possible thereafter, weather permitting. Surface covering should be complete two months after backfilling is complete.

The area number system corresponds to that contained in the D.O.E. Order, for ease of reference. The areas are shown on the Orientation Map, Appendix H.

The Scope of Work is as follows:

I Sub-areas 2-1, 2-1A, 2-1B, 2-1C, 2-2, and 2-3 are shown in Appendix A.

II In Sub-area 2-1, excluding sub-areas 2-1A, 2-1B, and 2-1C, the top two feet of soil will be removed and saved for backfill material. All material from a depth of two feet to seven feet will be removed and hauled to a secured landfill site. During excavation, care will be taken to prevent damage to four ground water monitoring wells installed in sub-area 2-1. Underground manholes, sewers, and piping will be either removed or left in place as shown in Appendix C. Those left in place will have all contaminated soil removed from their outside surfaces.

[] in top
2 feet?

III Sub-area 2-1A is covered by concrete and need not be excavated.

IV In sub-areas 2-1B and 2-1C, all material will be removed from the surface down to a depth of seven feet and hauled to a secured landfill site. Underground facilities will be either removed or left in place as shown in Appendix C.

OK makes less than
10 ft in surrounding
2 feet?

In sub-area 2-2, the top two feet of soil will be removed and saved for backfill. All material from a depth of two feet to six feet will be removed and hauled to a secured landfill site. Underground lines will be removed per Appendix C.

USEPA RCRA



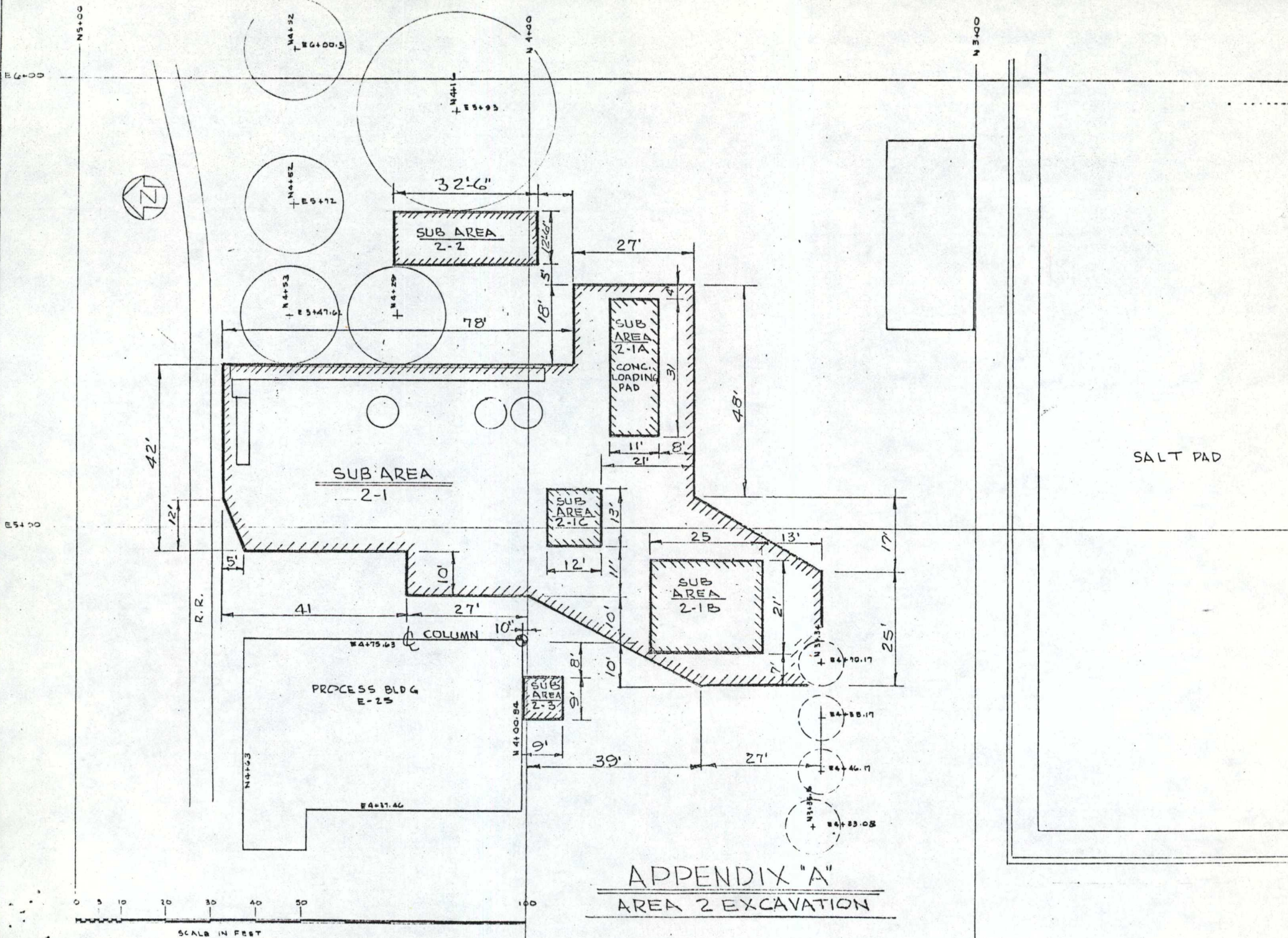
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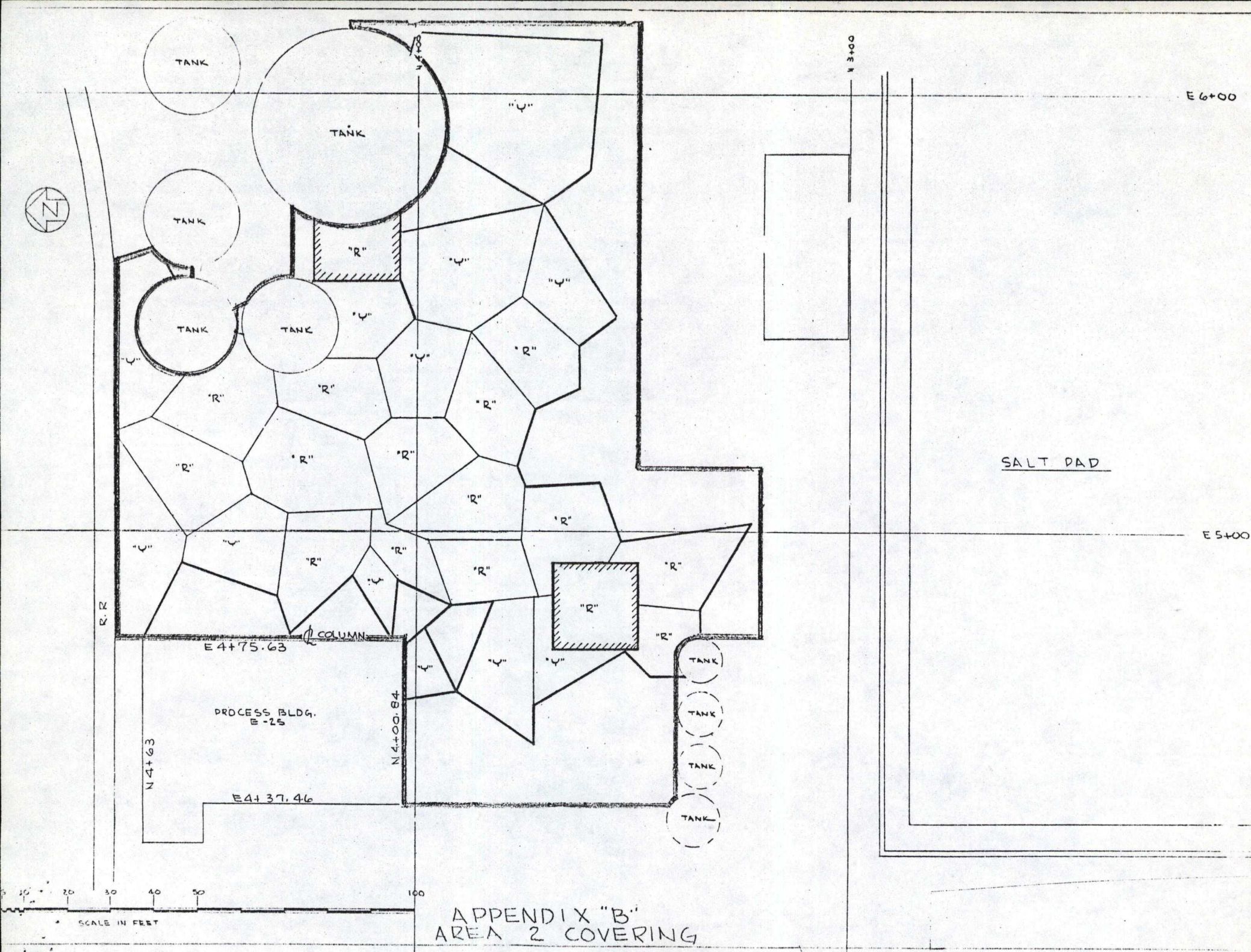
- O.K. Surround Holes
DUG ALSO 2-1504pm*
- VI In sub-area 2-3 the top five feet of soil will be removed and saved for backfill. All material from a depth of five feet to seven feet will be removed and hauled to a secured landfill site. [] in top
5'
- VII Sub-area 3 is shown in Appendix E.
- VIII In sub-area 3, the top five feet of soil will be removed and hauled to a secured landfill site.
- IX All excavated sub-areas will be backfilled per attached Appendix K, except all surface soil saved per above Paragraphs II, V, and VI will also be used for backfill.
- X A 3" thick asphaltic surface covering per attached Appendix L will be installed in Area 2 as shown in Appendix B. The surface will be contoured to allow drainage to a sump which will discharge to the salt pad.
- XI A 3" thick contoured asphaltic surface covering per attached Appendix L will be installed over sub-area 3 as shown in Appendix E.
- GOOD* XII Care will be taken by contractor not to excavate into the water table when removing contaminated soils.
- ?? THIS IS A
SHARED
RESPONSIBILITY* XIII All excavated soils removed for disposal will be loaded by a contractor into trucks provided by the disposal firm who will be responsible for safe transportation to the disposal site.
- XIV Transportation to the disposal site will be per Chem-Security Systems, Inc. proposal, attached as Appendix M, or approved equal.
- GOOD* XV The disposal site will be that of Chem-Security Systems, Inc. at Arlington, Oregon or approved equal.
- ? PROBABLY SHOULD
BE MADE BY
FIELD GEOLOGICAL
ENGINEER* XVI If any major rainfall occurs during the excavation period, work will cease and the contractor will cover the excavations to prevent rainfall from entering. The decision to stop excavation work will be made by the site representative of Hooker Chemicals & Plastics Corp. who will also determine when work can resume.
- GOOD* XVII Upon completion of the work all excavating equipment will be thoroughly cleaned and the contaminants disposed of in an environmentally sound method. This will be the responsibility of the contractor.
- GOOD* XVIII Prior to entering excavation and during the time workmen are in the excavation, the air in the excavation will be monitored regularly by Hooker Laboratory Personnel. Whenever the monitoring program reveals it necessary to maintain air quality standards, work will cease or appropriate respiratory protection equipment will be supplied by Hooker.
- GOOD* XIX Appropriate protective clothing will be supplied by Hooker to all contractor personnel exposed to contaminated soil. The clothing will consist of rubber boots, acid resistant trousers and jackets, goggles, respirator and rubberized gloves. An appropriate Safety Indoctrination Program will be given to the contractor prior to commencement of work. A physical examination will be

XIX given to all field workers prior to field work in accordance with Appendix J, Rev. 1 which is an edited copy of Hooker Chemical Company Health Procedure Number 04:01:02:003 Page 11, except that it will not be required of workers if they have had physical examination within three months of the time work begins providing that the examination included a Biochemical Profile and that the results of the examination, including the Biochemical Profile, are made available to Hooker Chemical Company. The contractor will have the responsibility of keeping records in fulfillment of the requirements of OSHA.

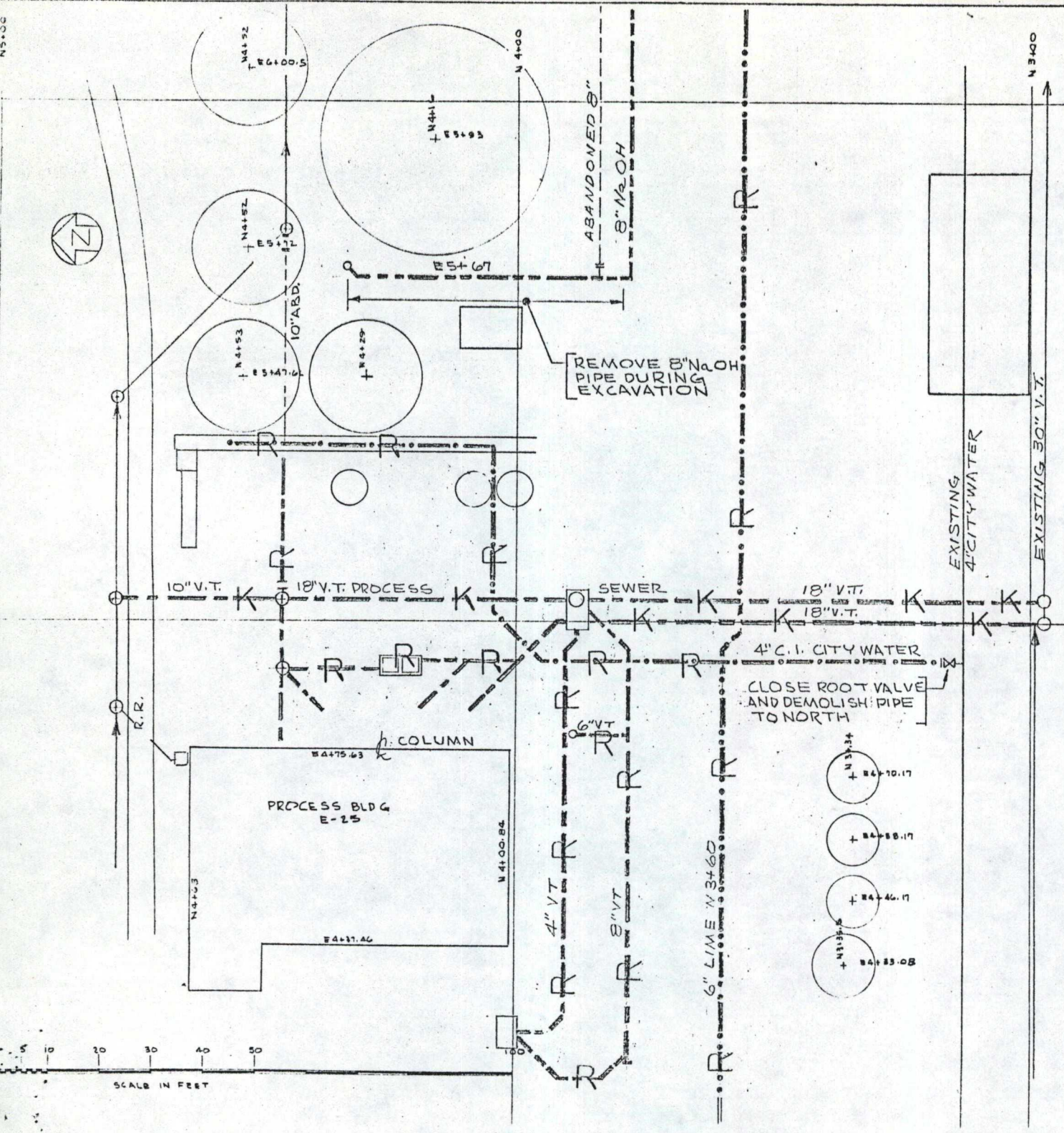
✓ XX Weekly Progress Reports will be submitted to D.O.E. by Hooker.

✓ XXI The Hooker Representative for communications with D.O.E. will be Lyle D. Feller





N5+00

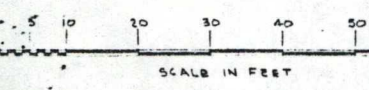


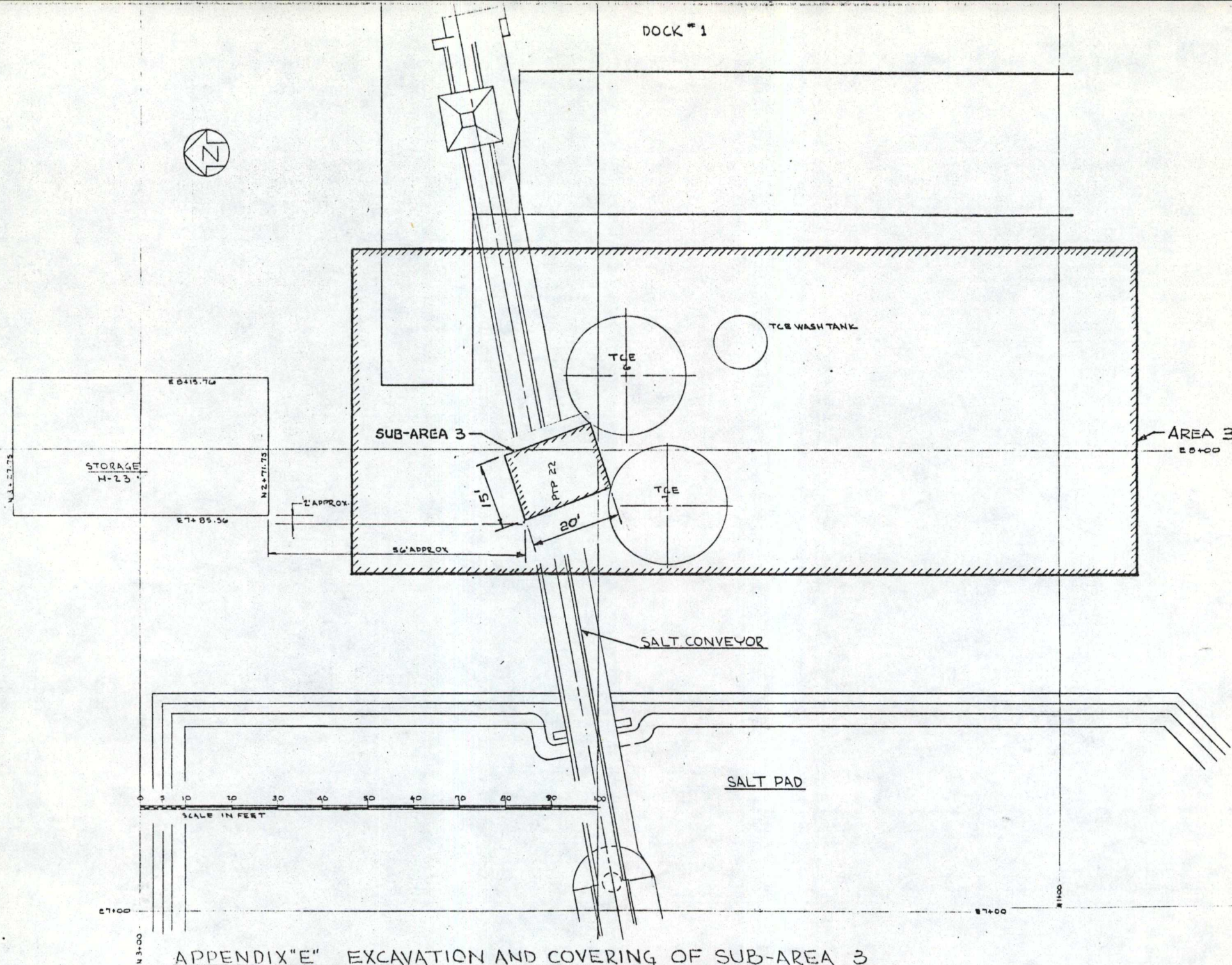
SALT PAD

LINE
 V.T. REMOVE
 CITY WATER

VT. KEEP

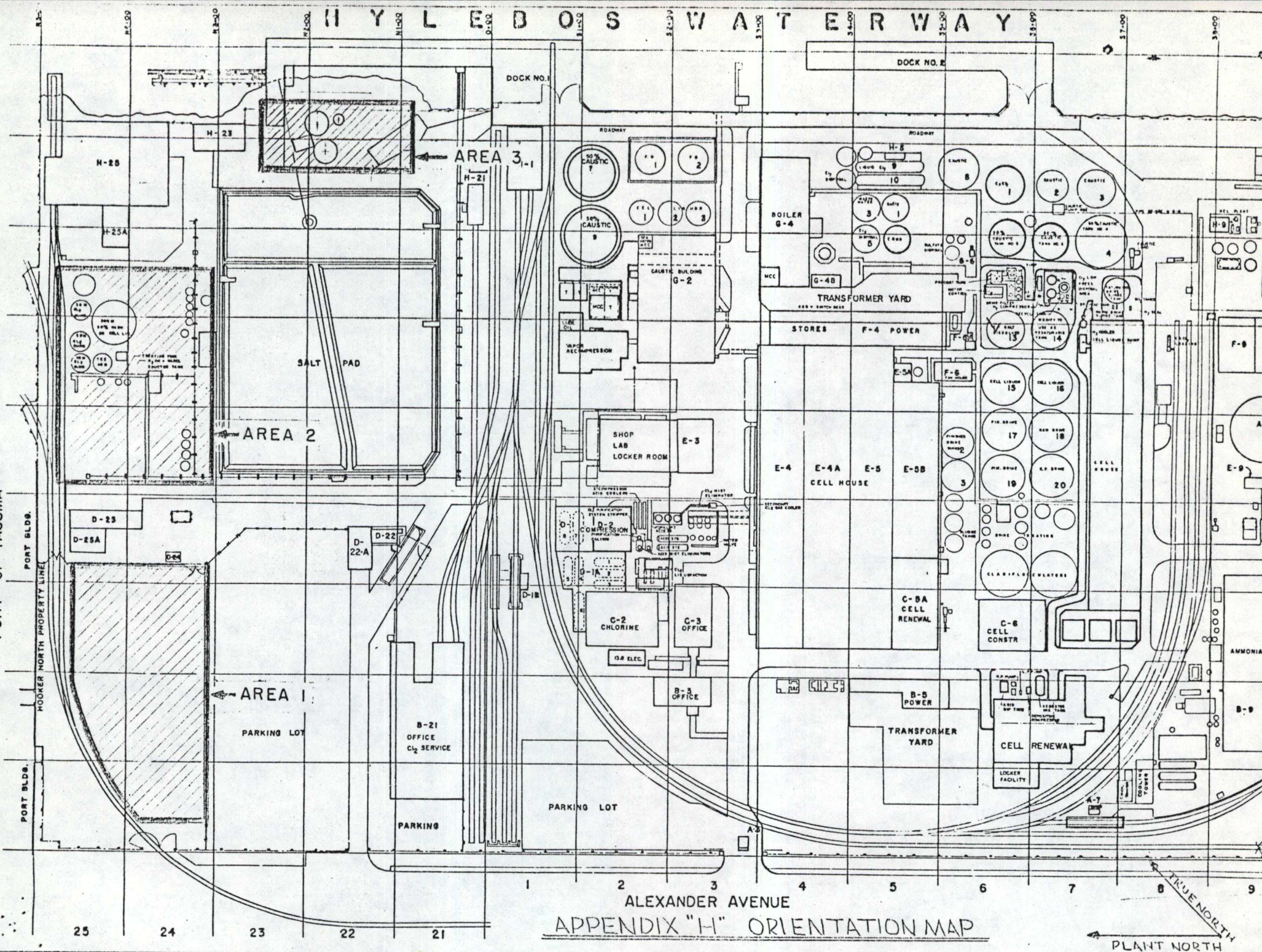
APPENDIX "C"
AREA 2 UNDERGROUND
EXISTING





HYDRO-SWATERWAY

PORT OF TACOMA



ALEXANDER AVENUE
APPENDIX "H" ORIENTATION MAP

HOOKER CHEMICAL COMPANY

HEALTH
PROCEDURENUMBER: 04:01:02:003
PAGE: 11 of 11
ISSUE DATE: Nov. 5, 1979
SUPERSEDES: NEWGUIDELINES FOR PRE-PLACEMENT EXAMINATIONS

The pre-employment pre-placement examination is a mandatory examination which includes:

1. ~~Gernell-Medical-Index~~
2. ~~Physical-Examination~~
3. Laboratory Analyses (done by Contract Lab, if possible)
 - a. SMAC-24
 - b. ~~Alternative biochemical profile only if done as a remote examination~~
 - c. Complete blood count with differential
 - d. Urinalysis including microscopic
4. ~~Chest x-ray (14x17).--If a chest film has been taken within 3 months, an effort should be made to get that film rather than taking another.~~
5. Pulmonary function (~~only for chemical plant workers~~).
6. ~~Audiometric Examination~~
7. Vision Examination

~~The above information is recorded on ECG forms which should be provided to the examining physician.--Standard forms are not presently provided for 5, 6 and 7.~~

8. Height, weight, pulse, and blood pressure.

APPENDIX K

SPECIFICATION

EXCAVATIONS AND BACKFILL

1. SCOPE

This specification establishes the requirements for the materials, classifications and workmanship required to excavate and backfill for all structures and underground services.

2. CODES AND STANDARDS

Equipment, materials and methods shall comply, where applicable, with the latest editions of the following codes and standards:

- 2.1 OSHA-- Construction - Safety and Health Regulations for Construction - All Sections pertaining to Construction.
- 2.2 GOVERNMENTAL CODES - All applicable Federal, State and local codes.
- 2.3 ASTM D 1557 - Standard Method of Test for Moisture - Density, Relations of Soils.

3. EXCAVATION CLASSIFICATION

- 3.1 CONVENTIONAL EXCAVATION - Any material that can be readily removed with conventional excavating equipment such as backhoes, clamshells or gradalls.

Stratified deposits that are readily "peeled" with a backhoe is to be classified as conventional excavated material. Under certain conditions it will be necessary to use air operated spades for cutting or trimming in conventional excavations.

- 3.2 ROCK EXCAVATION - Any consolidated mass of cemented material that cannot be readily removed with conventional excavating equipment.

Rock can be cemented material in ledges, bedded deposits, unstratified masses such as conglomerate deposits that present the characteristics of solid rock and boulders that exceed $\frac{1}{2}$ cubic yard in volume.

Under certain conditions, hardpan or stratified shales that are confined in an area not accessible to power shovels must be classified as rock excavation.

- 3.3 UNAUTHORIZED EXCAVATION consists of any excavation not required by these specifications and drawings. Unauthorized excavation below the elevations or beyond other required limits indicated on the drawings or in this specification shall be backfilled with satisfactory earth material, and compacted as per Section 5.5. Care shall be taken by contractor not to excavate into the water table when removing contaminated soils.

4. GENERAL

Excavations of every description and of whatever substance encountered within the excavation limits shall be performed to the lines and grades indicated on drawings.

- 4.1 EXISTING UNDERGROUND LINES: Unless designated for removal, all existing underground pipelines, drains, sewers and conduits, whose location is known prior to excavation, shall be protected from damage during excavation and backfilling and, if damaged shall be repaired by contractor at no cost to owner.
- 4.2 EXISTING PAVEMENTS: Unless designated for removal all such roads, parking areas, etc., shall be protected from damage, and should damage occur, damaged areas shall be repaired.
- 4.3 SAFETY: The furnishing and maintaining of adequate guard rails, lights and other protection as needed such be provided until completion of all work.
- 4.4 BRACING AND SHORING: The sides of all excavations four (4) feet or more in depth, which are not in solid rock or hard shale and where the earth is not sloped to the angle of repose, shall be held by suitable bracing.

Bracing and sheet piling shall be furnished by contractor and shall be of the proper size and arrangement of members that the earth banks are retained in place and that no earth movements can occur regardless of loading imposed upon them be it excavation equipment or existing equipment. Excavations shall be safe, stable and secure so that adjacent structures or utilities will not be damaged by earth movements.

5. FILL AND BACKFILL

- 5.1 DEFINITION OF FILL AND BACKFILL: Fill is defined as bringing an existing grade to a proposed grade. Backfill is defined as replacing material removed during excavation.
- 5.2 BEFORE FILLS OR BACKFILLS: Before placing backfills or fill material, all formwork and debris shall be removed.

No backfill shall be placed against foundations, piers or beams until they have acquired sufficient strength or are adequately braced.

- 5.3 MATERIALS FOR FILL AND BACKFILL: Shall be an approved excavated material, selected borrow, crushed rock, or other material. Backfill material shall be from an off-site source. This material shall be analyzed to verify that it is uncontaminated, and the results forwarded to the Washington State Department of Ecology for approval prior to placing the material.

Fill used to raise grade shall be clean granular material. Off-site material imported for fill or backfill, shall contain less than 5 percent fines (material passing a #200 sieve), and not more than 15 percent larger than 2 inches.

Moisture content of material when placed shall be in the proper range for compaction. Degree of compaction shall be as specified under 5.5.

- 5.4 PLACEMENT OF FILL AND BACKFILL: Fills used for site grading, and the backfills adjacent to the sides of and over the tops of foundations, shall be placed in 6 inch layers and thoroughly compacted with approved compacting equipment suitable for type of material being used.

Fills and backfill, when placed on side of piers, walls and free standing structures, shall be deposited on both sides at the same time to approximately the same elevations.

- 5.5 COMPACTION: Each layer of a structural fill shall be compacted to dry density of at least 95 percent of the maximum dry density as determined by ASTM - D - 1557.

6. BACKFILL FOR TRENCHES

Promptly backfill trenches for underground services after all required tests and inspections have been approved. Care shall be taken that backfill material is worked around pipes and solidly tamped on each side to avoid any lateral displacement. Hand tampers shall be used until a layer of compacted material is placed at least 12 inches deep over the top of any pipe. From this point to grade the layers shall be placed and compacted to the same density as the adjoining earth banks, except that backfill of trenches within building lines shall be made with the same material as the fill or backfill within the building and the compaction shall equal that of the building fill or backfill.

Place backfill to suitable elevations above grade to provide for anticipated settlement. Where roads or other surfaced areas are cut through by trenches, replace cut areas with stabilized aggregate specified herein.

7. LANDSCAPE BACKFILLING

Landscape backfilling shall be the replacing of material excavated for the purpose of constructing foundations, walls, pedestals, footings, etc., below grade, and such backfilled material not subjected to superimposed loads other than general landscaping.

The natural soil at the site will be considered suitable for landscape backfill upon owner's approval. Material approved shall be selected as the excavations progress and shall be stockpiled.

Landscape backfill material shall be placed around all walls, footings and foundations. Material shall be placed in layers not exceeding 12 in. in depth and compacted, using mechanical tampers, vibrating compactors, or other approved methods.

8. COMPACTION TESTS

Compaction testing shall be done in accordance with ASTM standard per Par. 2.1 above. Perform three tests on each layer. All tests shall be performed by a testing agency retained by Contractor. Contractor shall notify agency in time to make required tests without delaying progress of the work. Testing shall be done at locations designated by Owner's Site Representative.

APPENDIX L
AGGREGATE ASPHALT PAVING
FOR
ROADS AND PLANT

1.0 SCOPE

This specification establishes the requirements for the materials, classifications and workmanship required for installation of asphalt paving.

2.0 GENERAL

- 2.1 These instructions cover materials and construction of roads and process plant paving with graded aggregate asphalt mixtures for surface course.
- 2.2 The paving mixture shall be composed of coarse and fine mineral aggregate, mineral filler and asphalt and shall conform to class "B" Washington State Highway Standards. Conventional methods of handling and placing will be exercised and the minimum ambient temperature shall be 50°F.
- 2.3 The 6" base course shall be covered with a tack coat consisting of emulsified asphalt Grade CSS-1 and shall be applied at a rate of 0.15 gallons per square yard at a minimum ambient temperature of 50°F.

3.0 PREPARATION OF SUBGRADE AND BASE COURSE

- 3.1 Fill supporting asphalt paving shall be compacted backfill as specified in Specifications for Excavations and Backfill.
- 3.2 The sand subgrade and 6" crushed rock base course shall be brought to line and grade as shown on the project drawings. The crushed rock surface at any point shall not vary more than 0.0 inch above or 0.5 inch below the grades shown. The maximum irregularity shall not exceed 0.375 inch in any 10 foot line on grade. Surfaces which do not conform to this requirement shall be reshaped or reworked, and re-compacted to conform to the specified requirements.
- 3.3 Materials and placement for crushed rock base course shall be per Paragraph 7 and tested per Paragraph 10 of Specification for Excavations and Backfill.

4.0 ASPHALT PAVING - SURFACE COURSE

- 4.1 Asphalt paving shall be placed in even layers conforming to lines and grades on the drawings.

<u>Area</u>	<u>Max. Compacted Thickness Each Layer, Inches</u>	<u>Total Compacted Thickness, Inches</u>
Plant Paving, Binder	2	2
Plant Paving, Topping	1	1

5.0 COMPACTION

- 5.1 Asphaltic mixtures can be compacted with steel wheeled rollers or pneumatic-tired rollers. The initial or break-down pass will be with the steel-wheeled type. Pneumatic tire pressure shall be maintained at manufacturer recommended level and shall not vary more than 5 psi between any two tires. Steel-wheeled rollers shall be of sufficient weight and size to obtain a contact pressure or not less than 240 pounds per inch width of tread.
- 5.2 Compaction of newly placed aggregate asphalt mixtures shall begin immediately following placement. For road-mixed or mixed-in-place method, the mixture may require additional aeration so that the pavement will support rollers without excessive pushing under the rolls. Rolling shall continue until roller marks are no longer perceptible on the surface.
- 5.3 Rolling shall commence at edges and joints first and progress toward center of the placement area.
- 5.4 Roller wheels shall be kept clean and moist to prevent mix from adhering in a manner that will damage the pavement.
- 5.5 Only in places inaccessible to a power roller, compaction shall be obtained by means of mechanical rammers or by hand tampers weighing not less than 50 pounds and having a tamping face not exceeding 100 square inches.
- 5.6 The finished top surface shall conform to lines and grades shown on the drawings and shall not vary more than 0.0 inch above or 0.5 inch below the grades required. The maximum irregularity shall not exceed 0.25 inch in 10 foot line or grade. Defective areas of pavement shall be immediately removed, reworked, and recompacted as construction progresses.

PROJECT DESCRIPTION

1.0 PROJECT MANAGEMENT

Accountability and operation management demand that capable and experienced personnel undertake the project. Chem-Security brings to Hooker quality personnel with many years of experience in hazardous waste management. CSSI's Off-Site Services Division shall be responsible for actual project management and operation. This highly trained group has successfully completed site restoration projects for a wide range of industry.

2.0 EXCAVATION

Excavation of Area 2 and Area 3 as defined in the Hart-Crowser submission, October 31, 1980, shall be managed by CSSI. Prior to excavation Hooker, Chem-Security, and the Department of Ecology shall all be in agreement as to the detail and extent of excavation. Care shall be taken not to excavate into the water table when removing contaminated soils.

NATIVE
MATERIAL
BACKFILL?

Only uncontaminated material (in agreement with the Department of Ecology and Hooker) shall be used to replace excavated soils.

3.0 ANALYSIS AND TESTING

Hooker Chemicals and Plastics Corps shall be responsible for the following:

- * All analysis and testing
- * Ground water and/or surface water monitoring programs
- * Soil testing and analysis
- * Delays due to testing and analysis

4.0 TRANSPORTATION

Chem-Security shall provide transportation and manifesting of the contaminated soil from the Hooker location to the Pollution Control Center

at Arlington, Oregon. Vehicles shall be placarded in compliance with U.S. Department of Transportation regulations. In addition all transportation vehicles shall be filled with a plastic liner that shall completely enclose the contaminated soil. Further, the transportation vehicle shall be tarped. Transportation quality control is a very important aspect of the project. CSSI shall obtain all necessary permits and licenses for all phases of transportation.

5.0 CSSI REGIONAL POLLUTION CONTROL CENTER (RPCC) ARLINGTON, OREGON

Chem-Security shall use the Regional Pollution Control Center (RPCC) in Arlington, Oregon, for the final disposition of the contaminated soil. This hazardous waste management facility is in a geologically ideal location. The site is operated under the approval of the Oregon Department of Environmental Quality and within the framework of Hazardous Waste Disposal License HW-1. CSSI will be responsible for providing confirmation of disposal by returning signed copies of the chemical transportation manifest to Hooker.